IN THE CLAIMS

Please amend claim 1 as indicated.

1. (Currently Amended) An apparatus for measuring the instability index in a moving web comprising:

an air pulse for applying a pulse of fluid to the web to create a wave in the web;

at least two laser displacement transducers for measuring the displacement of the web as the wave moves through the web; and

a computer which obtains signals from the at least two laser displacement transducers, the computer calculates the instability index in the web based on the speed of the wave in the web and the speed of the web;

wherein the instability index of the web is greater than or equal to 0.5, and is measured by the following equation:

instability index = v/(v+vd) or v/(vd-v); wherein:

v = web speed; and

vd = wave speed.

2. (Original) The apparatus for measuring the instability index in a moving web of claim 1, wherein the air pulse is controlled by the computer.

3. (Original) The apparatus for measuring the instability index in a moving web of claim 2, wherein the computer calculates the speed of the web based on signals from the at least two laser displacement transducers.

4. (Previously Presented) An apparatus for measuring the instability index in a moving web comprising:

an air pulse for applying a pulse of fluid to the web to create a wave in the web;

at least two laser displacement transducers for measuring the displacement of the web as the wave moves through the web;

a computer which obtains signals from the at least two laser displacement transducers, the computer calculates the instability index in the web based on the speed of the wave in the web and the speed of the web;

wherein the air pulse is controlled by the computer;

wherein the computer calculates the speed of the web based on signals from the at least two laser displacement transducers; and

wherein the computer bandpass filters the signals from the at least two laser displacement transducers to eliminate wavelength flutter of the web and then differentiates the signals to amplify a change in position that is due to the wave passing in front of one of the at least two laser displacement transducers.

5. (Original) The apparatus for measuring the instability index in a moving web of claim 4, wherein the computer, after differentiating the signals of the at least two laser displacement transducers, obtains the signals and the computer mathematically cross-

correlates the resulting output to determine a time delay between the signals, the computer uses the time delay between the signals along with the displacement to calculate the speed of the wave.

6. (Original) The apparatus for measuring the instability index in a moving web of claim 5, wherein the computer calculates the tension of the web by the following equation:

$T = BW * (vd+v)^2$, wherein:

T = tension of web,

BW = basis weight of web,

vd = wave speed,

v = web speed.

7. (Previously Presented) An apparatus for measuring the instability index in a moving web comprising:

an air pulse for applying a pulse of fluid to the web to create a wave in the web;

at least two laser displacement transducers for measuring the displacement of the web as the wave moves through the web;

a computer which obtains signals from the at least two laser displacement transducers, the computer calculates the instability index in the web based on the speed of the wave in the web and the speed of the web; and

wherein the computer calculates the tension in the web while the instability index of the web is greater than about 0.8.